```
public class book 102
{
    string Title; 104
    string Author; 106
    chapter[ ] chapters; 108
}
public class chapters 110
{
    int chapternum; 112
    string chaptertitle; 114
    string text; 116
}
```

100

Fig. 1a
Background

```
public class book 122
{
    Moby Dick 124
    Melville 126
}

public class chapters 128
{
    1 130
    Loomings 132
    Call me Ishmael.... 134
}
public class chapters 136
{
    2 138
    The Carpet-Bag 140
    I stuffed a shirt.... 142
}
```

120

Fig. 1b
Background

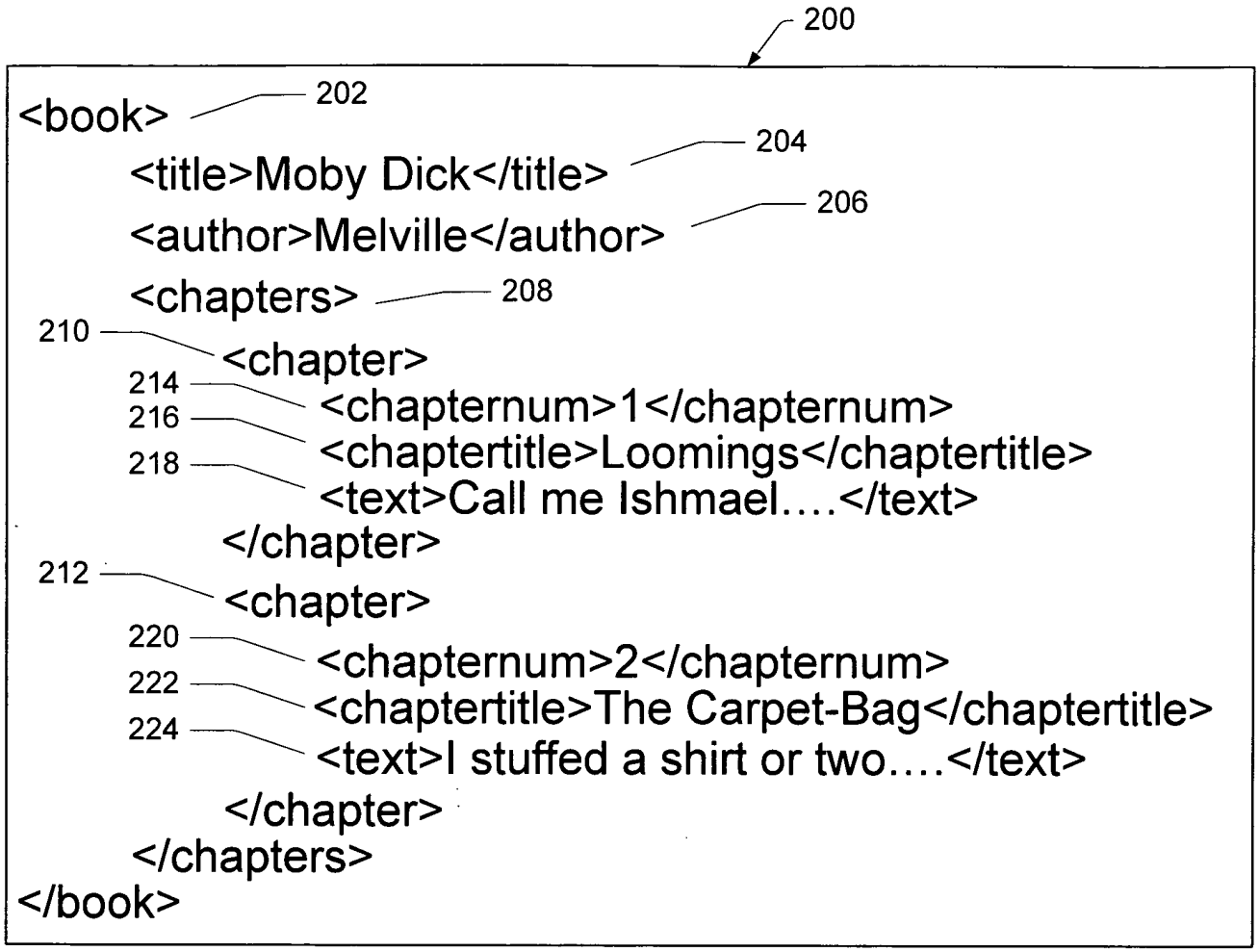


Fig. 2

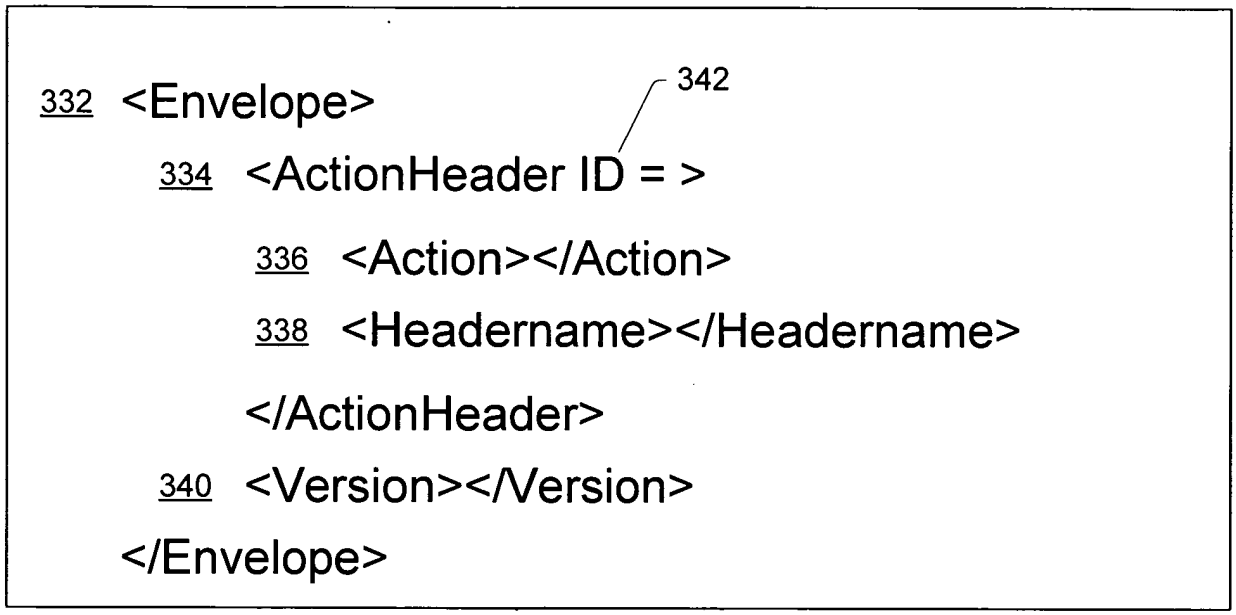
Background

```
302 Infoset: Envelope
    {
 304 Children   // Envelopes have the following child XML elements
      {
       306 ActionHeader  [property ActionHeader]
       308 Version   [property Version]
      }
    }

310 Infoset: ActionHeaderObj
    {
   312 Children  // ActionHeaderObjs have the child XML elements:
            {
               314 Action  [property ActionUri]
               316 HeaderName  [property Name]
            }
   318 Attributes  // ActionHeaderObjs have the XML attributes:
            {
               320 ID  [property ID]
            }
    }
```

Infoset Model
300

Fig. 3a



XML Template
330

Fig. 3b

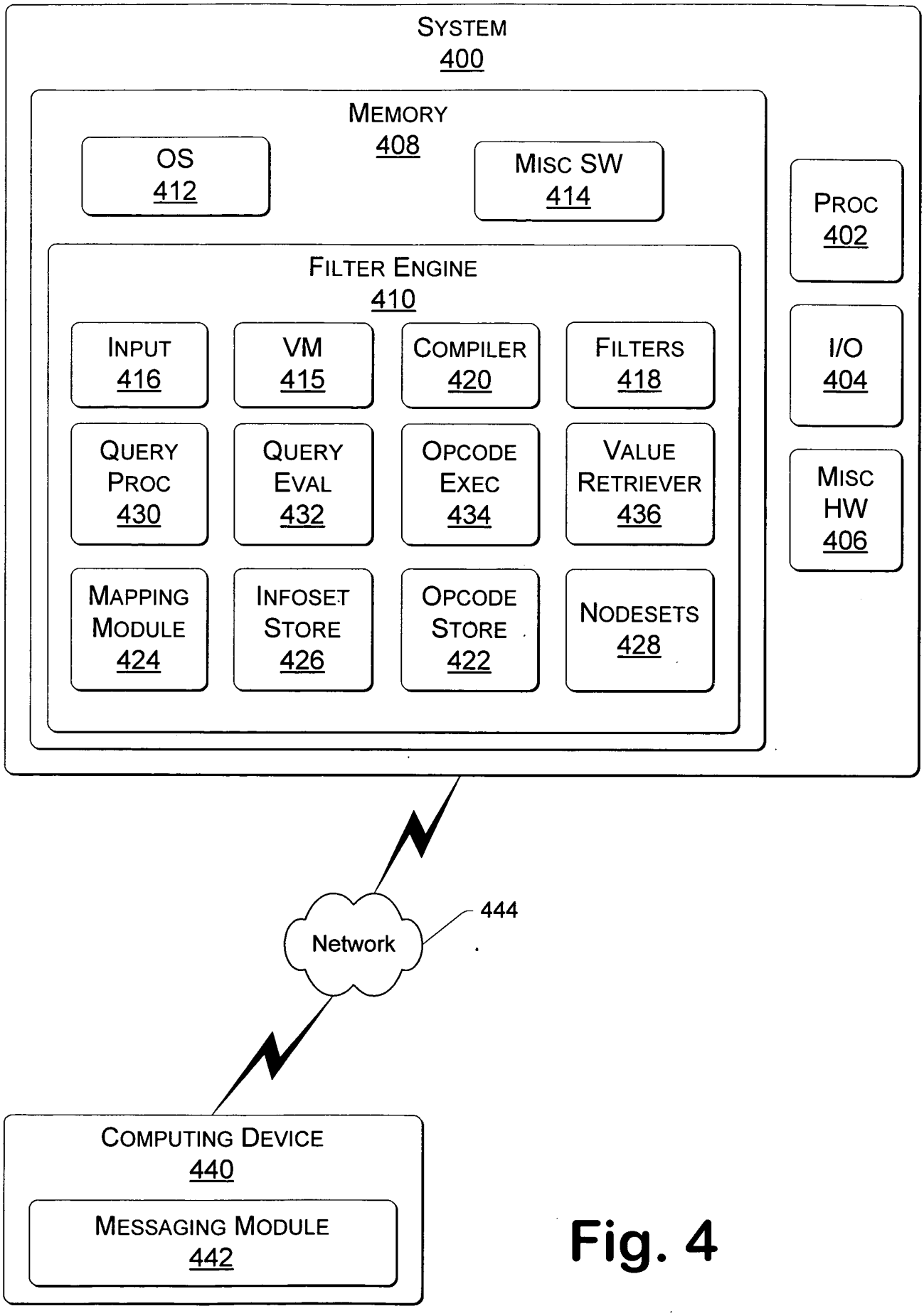

SYSTEM
400
MEMORY
408
OS
412
MISC SW
414
FILTER ENGINE
410
INPUT
416
VM
415
COMPILER
420
FILTERS
418
QUERY PROC
430
QUERY EVAL
432
OPCODE EXEC
434
VALUE RETRIEVER
436
MAPPING MODULE
424
INFOSET STORE
426
OPCODE STORE
422
NODESETS
428
PROC
402
I/O
404
MISC HW
406
Network
444
COMPUTING DEVICE
440
MESSAGING MODULE
442

Fig. 4

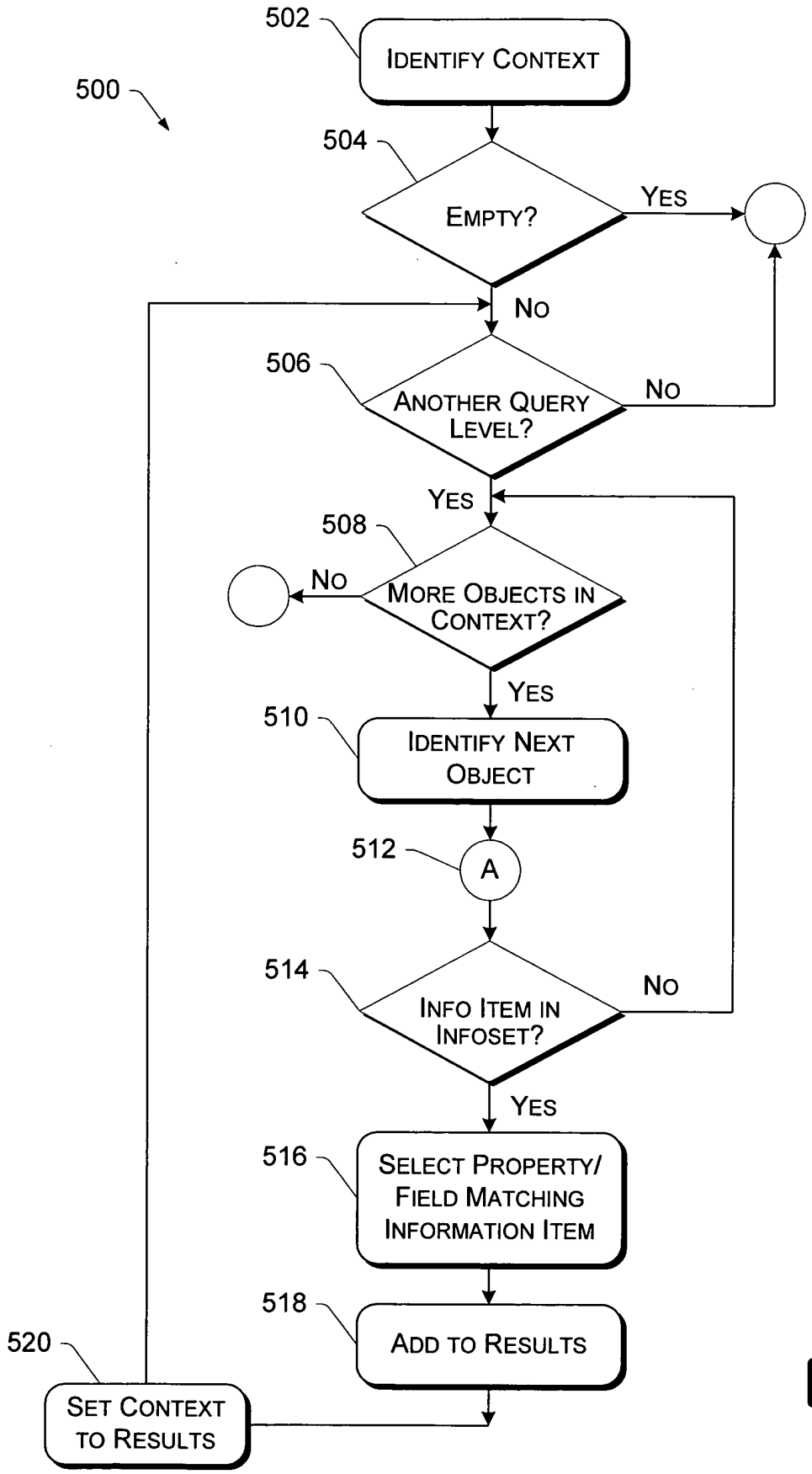

500
502
IDENTIFY CONTEXT
504
EMPTY?
YES
NO
506
ANOTHER QUERY LEVEL?
NO
YES
508
MORE OBJECTS IN CONTEXT?
NO
YES
510
IDENTIFY NEXT OBJECT
512
A
514
INFO ITEM IN INFOSET?
NO
YES
516
SELECT PROPERTY/ FIELD MATCHING INFORMATION ITEM
518
ADD TO RESULTS
520
SET CONTEXT TO RESULTS

Fig. 5

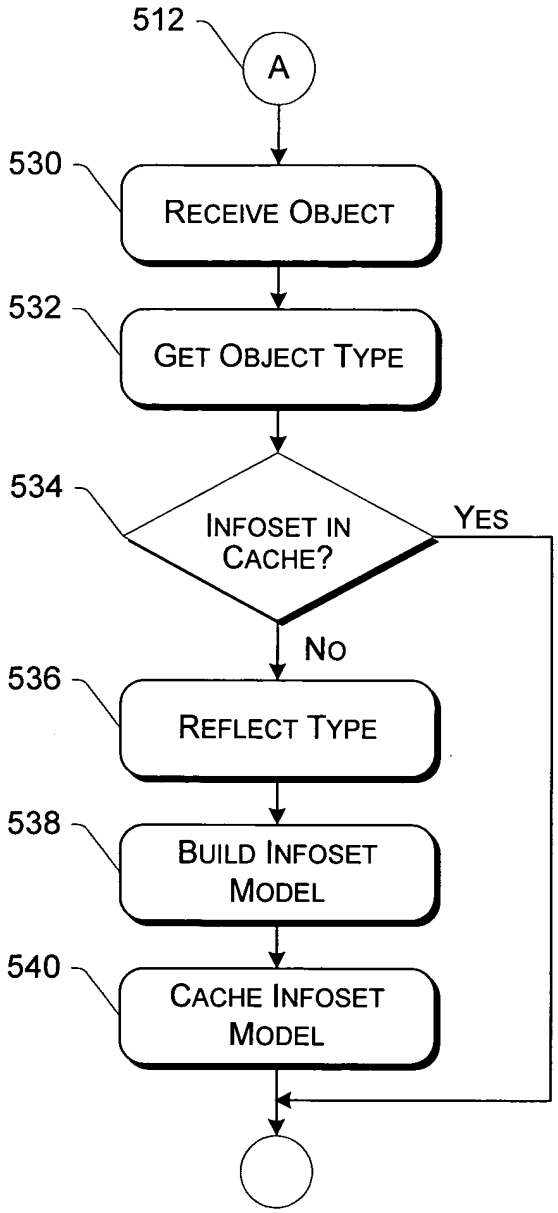

512
A
530
RECEIVE OBJECT
532
GET OBJECT TYPE
534
INFOSET IN CACHE?
YES
NO
536
REFLECT TYPE
538
BUILD INFOSET MODEL
540
CACHE INFOSET MODEL

Fig. 5 (Cont'd)

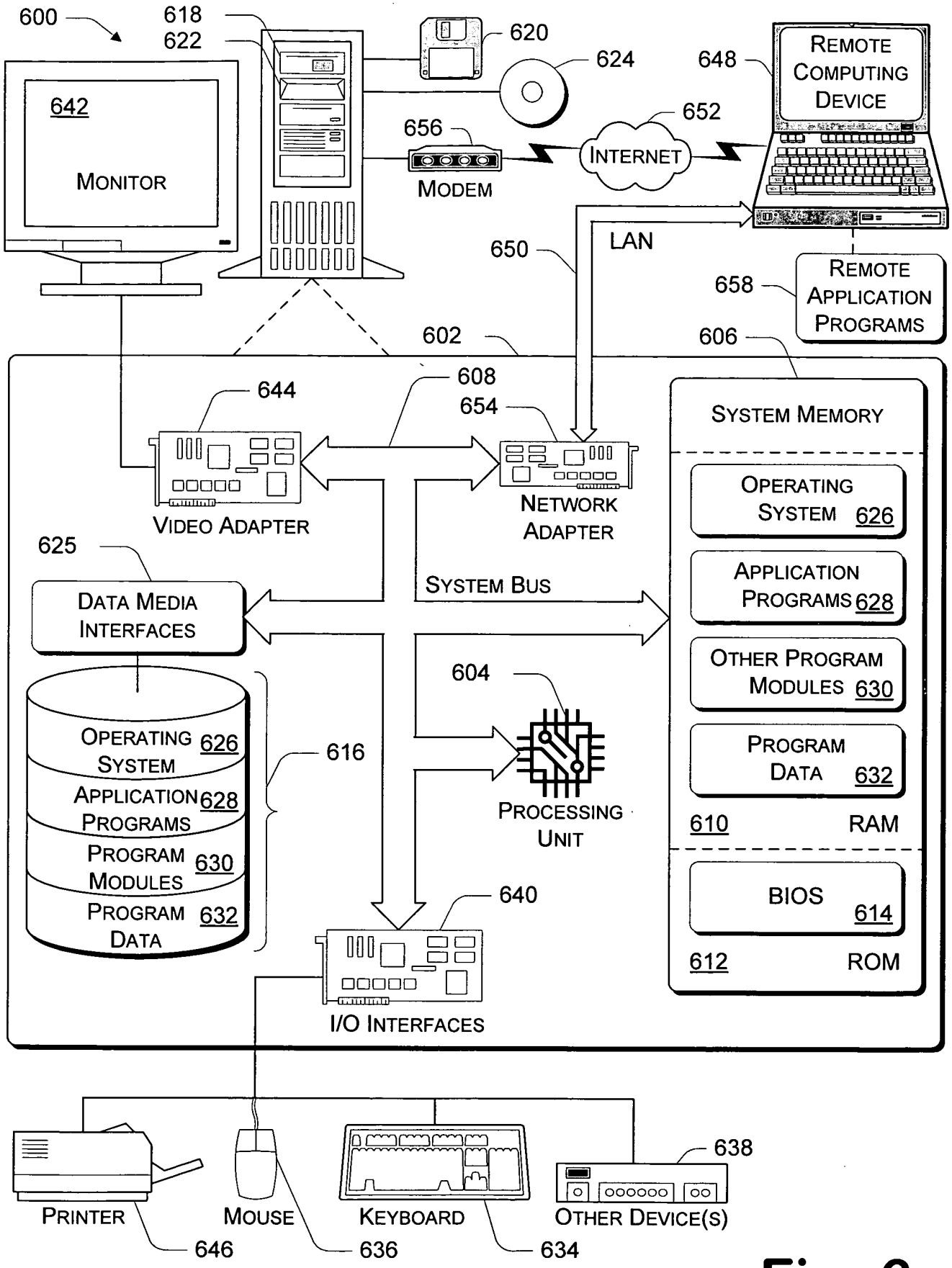

600
618
622
620
624
642
MONITOR
656
MODEM
652
INTERNET
648
REMOTE COMPUTING DEVICE
650
LAN
658
REMOTE APPLICATION PROGRAMS
602
606
644
608
654
VIDEO ADAPTER
NETWORK ADAPTER
SYSTEM MEMORY
OPERATING SYSTEM 626
APPLICATION PROGRAMS 628
OTHER PROGRAM MODULES 630
PROGRAM DATA 632
610
RAM
BIOS 614
612
ROM
625
DATA MEDIA INTERFACES
SYSTEM BUS
604
OPERATING SYSTEM 626
APPLICATION PROGRAMS 628
PROGRAM MODULES 630
PROGRAM DATA 632
616
PROCESSING UNIT
640
I/O INTERFACES
638
PRINTER
MOUSE
KEYBOARD
OTHER DEVICE(S)
646
636
634

Fig. 6